GEOGRAPHIC NEWS BULLETINS

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(The National Geographic Society is a scientific and educational Society, wholly altruistic, incorporated under the Federal law as a non-commercial institution for the increase of geographic knowledge and its popular diffusion.)

General Headquarters, Washington, D. C.

Contents for Week of March 24, 1930. Vol. IX. No. 5.

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Dr. Eckener Awarded Gold Medal for World Flight

DR. HUGO ECKENER plans to come to the United States to receive from the National Geographic Society its special gold medal in recognition of his round-the-world flight and of his "other noteworthy achievements which have contributed so much to the advancement of the science of aeronautics."

The presentation ceremony in Washington will be similar to those occasions upon which Rear-Admiral Richard E. Byrd was given a medal for being the first to reach the North Pole by airplane and when Col. Charles A. Lindbergh received The Society's medal for his flight from New York to Paris.

Zeppelin Converted Editorial Foe

Dr. Eckener's association with the development of dirigibles, paradoxically, dates from the time when Eckener was editor of a Frankfurter newspaper and printed bitter attacks upon the experiments then launched by Count Zeppelin.

Count Zeppelin sought out his editorial foe, took him up on some of his flights, and both narrowly escaped death later when one of Zeppelin's early airships exploded just before landing.

After this disaster Count Zeppelin threatened to abandon aviation, and it was Eckener, then converted to the future of the dirigible, who persuaded him to resume his work, and fostered the popular subscription which enabled him to do so.

American Flights Won Renown

Thenceforth Dr. Eckener was closely associated with Count Zeppelin. Hitherto he had been a passenger and observer; now he became a pilot, and studied all other phases of aircraft operation, which was to be his life work. Upon the death of Count Zeppelin he became acting head of the Zeppelin construction works, and last year was made president of the Zeppelin Company.

Two flights to America won Dr. Eckener world renown before he made his epochal flight around the world last August. In October, 1924, he brought the *Los Angeles* from Friedrichshafen, Germany, to Lakehurst, New Jersey. In 1928 he piloted the *Graf Zeppelin* from Germany to the United States and back to Friedrichshafen, carrying passengers on both trips.

Dr. Eckener's services to the science of aeronautics include not only his important work in helping develop the semi-dirigible to a passenger vehicle of the air, and in demonstrating its utility by his famous flights, but also in his observations on atmospheric conditions of the upper air, which observations have contributed notably toward making the skies safe for future aviation.

The Man-Lifting Kite

Since aviation's earliest days the National Geographic Society has aided the advancement of the science. Its *National Geographic Magazine* printed an article in 1908 on the experiments of Dr. Alexander Graham Bell's Man-Lifting Kite—an article written by Dr. Gilbert Grosvenor, now President of The Society.

In 1906 The Society appointed a representative to aid Walter Wellman in his preparations for the balloon flight by which he hoped to reach the North Pole.

WHEN BYRD AND HIS GALLANT CREW REACHED FRANCE

Heroic in the face of many difficulties, the transatlantic flyers added a notable chapter to aeronautic annals, and recorded valuable scientific data for future flying. Byrd is a medalist of the National Geographic Society, which has just awarded a special gold medal to Dr. Hugo Eckener for his round-the-world flight. In the picture, left to right, are Acosta, Byrd, Noville, and Balchen (See Bulletin No. 1).

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Asia's Newest Republic

WHERE is Ulan Bator Hoto, capital of one of the six largest republics in the world?

The telegraph and cable may lose the last of the three terms, so that in newspaper date lines the city is likely to make its infrequent appearances as "Ulan Bator." A dispatch from this little known city related that the estates of former princes and noblemen of the "People's Republic of Mongolia" were confiscated by the government and apportioned among collective farms operated by peasants.

Has Had Tangled Political Status

Ulan Bator Hoto—"City of the Red Heroes"—is merely a new name for Urga, which the geography textbooks of a few years ago identified as the administrative seat of a Chinese state. The new name was adopted in 1924, when the republic was consolidating its independence, declared in 1921.

Few countries have ever had such a tangled political status as Mongolia has had since 1911, when the Chinese Empire collapsed. Urga was the residence of one of the three most important "Living Buddhas" of the Lamaistic world, and the government was, in effect, a theocracy under Chinese control. When the Chinese Emperor lost his throne in 1911, the Mongol princes and lamas expelled the Chinese officials, declared their country autonomous, and set up an arrangement by which the "Living Buddha" became both king and national "god."

The influences of the Russian Empire increased in semi-independent Mongolia for a time, but, with the progress of the World War, Mongolia was left without this source of assistance, and in 1919 China again took possession. Refugee "White" Russians assembled in Siberia following the Bolshevik Revolution and in 1920 and 1921 drove the Chinese from Mongolia and set up a state under Russian influence. By the end of 1921, Soviet armies had driven both White Russians and Chinese from Mongolia, and the "Living Buddha" was again the nominal ruler. In 1924 the "Living Buddha" died, and the "Mongolian People's Republic" was proclaimed.

The Republic Has No President

It is a republic without a president, the supreme authority resting in a parliament of 100 elected members. This parliament, or Great Huruldan, chooses thirty of its members to form the Small Huruldan which normally acts while the larger body is in recess. The small Huruldan in turn selects five of its members to form a permanent Presidium. This government concerns itself not with the whole of the territory of the old Mongolian state, but only with that part of it that was formerly called Outer Mongolia, lying north of the middle of the Gobi Desert. Inner Mongolia, the strip about 300 miles wide, lying next to China proper, is recognized as an integral part of China.

Little comes to the outside world in regard to the operations of the Mongolian government, but it is believed to be coming more and more under the influence of Soviet Russia and to be shaping its activities in increasing accordance with Soviet principles.

The trade of the country was in the past chiefly with China by means of horse-drawn carts and camel caravans from Urga. But Ulan Bator Hoto looks more to the north, and both exports and imports move increasingly between Mongolia and Trans-Siberian Railway towns.

Since then it has published aviators' own accounts of many notable air voyages, including those of Byrd, Lindbergh, Macready's non-stop flight across America, Sir Ross Smith's flight from London to Australia and Captain St. Clair Streett's first Alaskan air expedition.*

Commander Byrd received his first far northern flying experience on The Society's expedition of 1925 to the vast area north of the Beaufort Sea and The Society's chief cartographer, Albert H. Bumstead, devised the sun compass of which Commander Byrd said, "Without it we could not have reached the Pole." Commander Byrd used the compass in his Antarctic flights, toward which the National Geographic Society has contributed $50,000.

* See, in *The National Geographic Magazine*, "Dr. Bell's Man-Lifting Kite," by Dr. Gilbert Grosvenor, January, 1908; "The First Alaskan Air Expedition," by Capt. St. Clair Streett, May, 1922; "Flying Over the Arctic," by Richard E. Byrd, November, 1925; "From London to Australia by Aeroplane: A Personal Narrative of the First Aerial Voyage Half Around the World," by Sir Ross Smith, March, 1921; "Man's Amazing Progress in Conquering the Air," July, 1924; "Seeing America with Lindbergh," by Lieut. Donald E. Keyhoe, January, 1928; "To Bogotá and Back by Air," by Col. Charles A. Lindbergh, May, 1928, and numerous other aviation articles listed in The Cumulative Index of *The National Geographic Magazine*.

THE CORMORANT LAKE SPECIAL OFFERS THRILLS AND CHILLS

Transportation on the Hudson Bay Railway in northern Manitoba seems somewhat primitive, but it is a vast improvement over the pack-train methods of only a few years ago (See Bulletin No. 5).

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U. S. E. Compared with U. S. A.

HOW would a United States of Europe, the new super-state proposed at Geneva, compare with the United States of America?

Irrespective of its political aspects or its feasibility, the suggestion affords opportunity for an interesting geographic comparison.

As proposed, the European federation would number twenty-seven sovereign states. Russia is omitted. Principalities like Monaco and Liechtenstein, also San Marino, Andorra, and the Free City of Danzig do not come within the scope of the following comparisons.

Area Smaller; Population Larger

The United States of America is one and one-half times greater in area, but citizens of the "United States of Europe" would outnumber Americans in the proportion of three to one.

The Texas of "U. S. E." would be France, Luxembourg its Rhode Island. Both are smaller than their American counterparts, but only slightly smaller.

Relative size raises a question which will stump most Americans. It is this: Of the four biggest American States, how many are larger than the four largest European countries excluding Russia? The answer: One.

France, the European Texas

Giant Texas is larger than France, but only one-fifth larger. California, Montana, and New Mexico are each smaller in area than Spain, Germany or Sweden.

So much geographic instruction stresses the smallness of Europe by American prairie standards that it is surprising to discover that the Netherlands is larger than Maryland, that Finland would carve into three New York States, and that the total square miles of Oregon and of Jugoslavia are nearly identical.

Striking contrasts between Europe and America turn up in the field of population. In the United States the average number of persons per square mile is 35; in Europe, 127. Nevada must miraculously spread seven-tenths of a person to each square mile, while Belgium, equally miraculously, must squeeze 670 men, women and children on one average square mile. Yet Rhode Island and Massachusetts are each more densely populated, according to area, than the United Kingdom or Germany.

A united Europe's manpower overshadows America tremendously. All the people of the six most populous American States—New York, Pennsylvania, Illinois, Ohio, Texas and California—number 8,000,000 less than the population of Germany. Little Luxembourg, lost in Europe like a slice of olive in a cream cheese sandwich, has more citizens than Wyoming.

Our "Northern Neighbor"

Should Europe ever federate, America can refer to the "U. S. E." as her "northern neighbor." If all Europe were brought down to the latitude level of the United States, the Strait of Gibraltar would lie on the Equator, 2,000 miles south of its present position.

Disparity of latitude, however, does not prevent parity in climates. Except for the aridness of the Southwest, America's climates are much like Europe's.

Some conditions similar to those which brought the union of the thirteen Amer-

The Republic of Mongolia has an area of more than a million and a quarter square miles. Its population is estimated to be fewer than one million, made up roughly of three-quarters of a million Mongols and 100,000 foreigners, mostly Russians. There are said to be fewer than 10,000 Chinese in the Republic now.

Great Stock-Raising Region

The people have never engaged in agriculture or industry, but have devoted themselves to stock raising. But for primitive methods Mongolia might become the world's greatest source of livestock products. The animals have never been protected in winter or fed from hay and grain laid up during the mild half of the year. They must shift for themselves the year round. So severe are the winters that some years as many as a third of the animals perish. In spite of these heavy losses, however, there are in Mongolia more than a quarter million camels, a million and a third horses, a million and a half cattle, and between ten and eleven million sheep and goats. The principal exports are live animals, wool, camel's hair, milk products, and hides and furs.

North of the Gobi are vast plains covered in summer with succulent grasses. It is there that the great herds of domestic and wild animals roam—wild horses, wild donkeys, and antelopes. Farther to the northwest are tree-covered mountains which give Mongolia a potential timber supply. Mineral deposits are undeveloped.

The Lamaistic religion, a modified and somewhat degraded Buddhism, has had deep effects on Mongolia. Nearly one-third of the male population are monks who have been living without productive effort. These members of religious orders dominated the country while the "Living Buddha" existed, but since the rise of the republic their influence is waning. The state religion of passiveness also tended to discourage initiative.

Government Attempts Modernization

The new régime is attempting to bring progress to the republic by beginning an educational system, by encouraging steps toward agriculture, and by improving stock-raising methods. In some sections hay is being stored, winter shelters constructed for the animals, and wolves destroyed. A postal system has been started, a currency adopted, and automobile lines opened. With Soviet assistance steamboats have been put into operation on two of the few navigable rivers, the Selenga and the Orkhon. These streams flow from north-central Mongolia across the border into Siberia and enter Lake Baikal. Not a mile of railway exists in Mongolia. Soviet Russia has, however, recently built a branch line from the Trans-Siberian Railway to Kyakhta, on the northern border of the republic. A very large percentage of Mongolian commerce now moves through this railhead. The government has plans for the building of the first railway on Mongolian soil, extending from Ulan Bator Hoto northeastward to the Trans-Siberian line at Chita.

Cities are few in Mongolia. Ulan Bator Hoto, the capital, has a population of about 100,000 and is thus an enormous city for a land of semi-nomadism. In the last fifteen years it has taken on many aspects of modernism. It has an electric lighting and power plant, theaters, telegraph facilities, both wire and wireless. telephones, motor busses, and newspapers.

The official status of the Mongolian Republic internationally is literally a Chinese—and Russian—puzzle. In a treaty with China, the Soviet Government says that it "recognizes Outer Mongolia as an independent part of the Republic of China and respects there the sovereignty of China." But there is this pointed addition: "However, Russia so widely recognizes the autonomy of Mongolia that not only will she not permit any interference by China in the interior affairs of Mongolia, but even the foreign policy of Mongolia is to be independent."

Note: See, in *The National Geographic Magazine*, "By Coolie and Caravan Across Central Asia: Narrative of a 7,900-Mile Journey of Exploration and Research over 'The Roof of the World,' from the Indian Ocean to the Yellow Sea," by William J. Morden, October, 1927; and "The Road to Wang Ye Fu, an Account of the Work of the National Geographic Society's Central-China Expedition in the Mongol Kingdom of Ala Shan," February, 1926.

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Ore Beds and Saltiness of Sea Traced to Volcanoes

WHERE have the world's ore deposits come from—deposits that have given man tools and instruments and materials to make possible the complex civilization of to-day?

Why is the sea so salty—much saltier than it would be if only the rivers contributed salt-making materials?

These and other problems, interesting alike to the man in the street and the man in the laboratory, and never satisfactorily solved, have been brought much closer to solution by Dr. E. G. Zies, of Washington, as a result of his observations in the famous Alaskan volcanic area called the "Valley of Ten Thousand Smokes," discovered by a National Geographic Society expedition in 1916.

Dr. Zies, chemist of the Geophysical Laboratory of the Carnegie Institution of Washington, was a member of the staff of scientists who made up one of The Society's expeditions to the Valley. His work has just been published in a technical paper of the National Geographic Society.

The explosive eruption in the Valley of Ten Thousand Smokes took place in 1912 and preceded the eruption of near-by Mt. Katmai by only a short time. As a result of this activity, the Valley became a seething inferno of superheated steam and chemical vapors bursting from countless cracks and seams. In no place in the world, during the relatively short life of modern science, says Dr. Zies, has there been an opportunity, on such a large scale and on such an intensive basis both as to heat and chemical activity, to study the effects of volcanic action on rocks and minerals, and on the make-up of the atmosphere.

When Dr. Zies was in the Valley, some of the fumaroles—the vents for the steam and other vapors—had cooled to a little less than the boiling temperature of water, while others were giving off gases at 1,200 degrees Fahrenheit. The steam from some of these vents was so hot that sticks held in the vapor for a moment would burst into flame when withdrawn.

Hot Gases Brought Metals to Surface

Mixed with the steam were found three very active chemicals in the form of hot gases, hydrochloric acid, hydrofluoric acid, and hydrogen sulphide. The heat which melted rocks far below the earth's surface at the same time turned into gases the minute amounts of various metallic constituents in the rocks. These gases were swept upward by the escaping steam and acid vapors. In addition, the hot, metal-hungry acid gases attacked tiny bits of metal-forming substances scattered in the rocks through which they passed nearer to the surface. As a result, these metals were gasified and swept along with the other gases toward the earth's surface. These acid and metal-laden vapors also materially altered the rocks through which they passed, especially the porous pumice.

While the escaping gases were still very hot they gave up their metallic burdens upon striking the lower temperatures and lessened pressures of the open air. These transported metals were deposited within the cracks and fissures through which the gases rushed. One of the most abundant deposits from the gases consisted of magnetite, a black oxide of iron. This substance was deposited in the form of crystals growing one upon another. In some of the larger vents, the deposits reached a foot in thickness. Other metallic substances were deposited with the magnetite.

ican colonies cause Europeans to discuss federation. Thirteen colonies with thirteen tariffs prompted the drafters of the American constitution to abolish economic borders. Twenty-seven European nations have twenty-seven different schemes for tariffs that make every border a trade hurdle.

Money, Tariffs and Stamps

Within an area two-thirds the size of the United States there are twenty-six different money systems (Luxembourg uses Belgian money), twenty-seven different sets of postage stamps, and twenty-seven different immigration regulations. Another international aggravation faces the continental automobile driver; in some countries he must keep to the left of the road, in others to the right. While railway gauges have been unified, for the most part, Spain still has one-third her mileage in narrow-gauge roads.

A "U. S. E." has the long-lived Roman Empire and the short-lived Holy Roman Empire for precedents. In recent times the metric system has been accepted by all Europe except the United Kingdom and the Irish Free State.

Unlike the problems of American union in 1776 is Europe's variety of governments. The thirteen colonies had more or less similar governments. Europe's twenty-seven states have almost every style of government possible—republic, monarchy, dictatorship, dominion status—each with variations. Two states of Europe are already "United States." Germany is a union of eighteen self-governing states and cities; Switzerland is the oldest federal union in the world.

Note: See The National Geographic Society's Map, "Europe and the Near East," published as a supplement with the December, 1929, issue of *The National Geographic Magazine*, and "The United States of America," published as a supplement with the April, 1923, issue of *The Geographic*.

Bulletin No. 3, March 24, 1930.

FILLING WATER CASKS AT A WELL IN A DESERT OF CENTRAL ASIA

Though the desert of rock and sand is waterless, the water level is only 6 feet below the surface here. The water is dipped from the well into the broad tanks for passing caravans (See Bulletin No. 2).

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World's "Worst Water Passage" Again Navigated

THE Northwest Passage, aim of explorers for 400 years, was navigated last summer.

Three boats established continuous communication along the icy straits of North America's northernmost coast.

Whether the achievement marks the second or third time the Northwest Passage has been forced is open to debate, but that question does not dim the brilliance of the exploit.

North, Central and South America 400 years ago confronted European explorers with a line as solid as a first-class football line. Columbus and Balboa vainly tried to drive through center to reach the goal, which was India. Magellan finally made a succesful run around left end. Encouraged by his success, Cabot, Frobisher, Davis, Hudson, Ross, Parry, Sir John Franklin and others tried to circle the right end of the 10,000-mile continental land line. All failed.

Only One Boat Pushed Through

Only one small boat has ever sailed completely around the ice-encrusted, island-filled north shore of North America. *Gjoa* is the boat's name. It is preserved in a San Francisco park, having been presented to the city by Amundsen, the Norwegian explorer, who took three years to sail the 72-foot vessel around the North American "Horn." That was 1903 to 1905.

What is the Northwest Passage?

From St. Johns, capital of Newfoundland, to Point Barrow, northernmost Alaska, is 4,000 miles. The shore line between these two points is roughly a straight line; Labrador, Ungava, Southampton Island lying in the mouth of Hudson Bay, the northern borders of Keewatin, Mackenzie and Yukon territories, and the Alaska coast, facing the Beaufort Sea. The first 1,000 miles along the Labrador coast is easy going, and the next 600 miles through Hudson Strait to the entrance of Hudson Bay is sufficiently open in summer to warrant Canada to build a wheat port at Churchill. Likewise, the 1,000 miles of water from Point Barrow, Alaska, southeast into Amundsen Gulf in summer time receives whalers and Hudson Bay trading boats.

Chinese Puzzle of Islands

That leaves the 1,400 miles between Amundsen Gulf and Southampton Island as the real obstacle.

Franklin Territory, as Canada has named it, in honor of Sir John Franklin, includes the maze of islands lying off the 1,400 miles of coast choking the waters between the Canadian mainland and Greenland. No Chinese puzzle is more intricate than this labyrinth which blocked early explorers' attempts to reach China.

The shortest water passage is up Fox Channel, through Fury and Hecla Strait between Melville Peninsula and Baffin Land, up the Gulf of Boothia, through Bellot Strait between Boothia Peninsula and North Somerset Island, south of Victoria Island to Amundsen Gulf.

But explorers have found that a longer way around is the shortest way through the Northwest Passage. The best route seems to be through Davis Strait, up Baffin Bay, in through Lancaster Sound and its westward extension, Barrow Strait, south through Peel Sound and Franklin Strait to the lane of water between bulky Victoria Island and the mainland.

Forcing the Northwest Passage will probably never be more than an exploit.

Thus the hot, acid steam, given off by volcanoes and by lava flows and intrusions, plays an important part in the collection, transfer, initial concentration, and deposition of metallic ores.

Cooling of Area Altered Ores

The deposition of this type of mineral compounds accumulated at the mouths of the fumaroles so long as the temperature of the vapors remained above the boiling point of water. But as soon as the escaping vapors fell below this point, so that the steam condensed into water, a second step in ore formation took place. The acid waters attacked the gas-formed deposits and dissolved them. From these solutions sulphides were formed by action of hydrogen sulphide gas. It is significant that many of the world's economic ore deposits are in the form of sulphides.

No ore deposit of economic importance is likely to be formed at the surface from the slowly cooling lava that is believed to lie under the Valley of Ten Thousand Smokes, owing to the fact that erosion by the swift streams in the Valley can carry off the reaction products. The Valley deposits are, however, significant because nature has there actually provided her students with a laboratory in which the various steps of ore deposition can be studied. It is Dr. Zies' opinion that the hearth or feeder channels of an inactive volcano, well below the earth's surface, where solutions will not be washed away by surface drainage, are the locations where economic ore deposits are much more likely to be laid down.

The saltiness of the sea is, in part, directly related to volcanic action, according to data based by Dr. Zies on his observations in the Valley. It has been known for some time, as a result of analyses of river waters, that streams flowing into the sea do not carry enough chlorine to combine with all the sodium carried. (The combination of chlorine and sodium is ordinary table salt.) On the other hand, sea water contains more than enough chlorine to combine with the sodium present. The sea is, therefore, saltier than it would be if only the rivers contributed the salt-making ingredients.

Millions of Tons of Chlorine Washed into Sea

Dr. Zies found that the fumaroles of the Valley of Ten Thousand Smokes were emitting into the air vast amounts of hydrochloric acid. He estimated that in one year a million and a quarter tons of the acid were given out in gaseous forms from this single volcanic area, and became diffused in the higher atmosphere. Eventually the acid is washed from the air by raindrops, and, as approximately three-fourths of the earth's rain falls directly into the sea, large amounts of chlorine thus enter the sea independently of that contributed by river water. The Valley of Ten Thousand Smokes, which is only one of the many volcanic areas of the earth, itself supplies one per cent of the chlorine needed each year to combine with the sodium of the river waters, Dr. Zies estimates. He believes, therefore, that the average annual amount of chlorine given off by all volcanic areas is easily sufficient to keep the saltiness of the sea up to its present level.

One interesting aspect of Dr. Zies' work was the analysis of samples of lava which represents the material far below the surface from which the fumarolic gases come.

The metals were present in the rocks in such small amounts that they were not detectable by ordinary means, and a special analytical procedure had to be developed. Dr. Zies first concentrated the metallic substances with chemicals and then successfully analyzed the concentrates by means of the spectroscope. Thus was written another romance of science; the same magical instrument which has successfully reached millions of miles into the heavens and disclosed the make-up of stars was used to ferret out, by its tell-tale lines and shadows, the secrets locked up by Nature in the bowels of the earth.

Note: See, in your public library or school library, "The Valley of Ten Thousand Smokes," by Robert F. Griggs, a volume which, in its 350 pages and 262 engravings and color plates, shows how the Alaskan volcanic region reproduces on a small scale many of the processes of the earth's formation.

Although the channels are yet to be charted in detail, the waters are known to be shallow in many places. Amundsen got the *Gjoa* through but often there was only a few inches of water underneath her keel. Only the airplane can open up this frozen archipelago to civilization. Pilots are already flying their planes into the snowy wilderness, braving temperatures as low as 60 degrees below zero.

England gave a reward of $50,000 for the discovery of the Northwest Passage to Admiral Sir Robert McClure, who sailed in from the west and had to abandon his ship on Banks Island. He and his crew were rescued by another expedition coming from the east, so the Admiral received the honor for discovering the Northwest Passage, although he did not sail it in a boat.

The recent attainment of the passage has been reported accomplished with three ships: the *Baychimo* out of Vancouver, which is wintering in Cambridge Bay on the south shore of Victoria Island, and the *Fort James* from Newfoundland, which came through Lancaster Sound, and is fast in the ice at Gjoahaven, King William Island. The two ships are only 250 miles from each other. A motor schooner of the Hudson Bay Company made the trip from one to the other, thus completing the Northwest Passage transit.

Modern exploits in this region take on greater importance in view of the death penalty Nature has laid on many who have attempted the Passage. Sir John Franklin's party numbered 129, all of whom were lost. Henry Hudson, who sailed up the Hudson River and also discovered Hudson Bay, was put out in a small boat off Labrador with his young son and some sick sailors by a mutinous crew, and they perished in the ice-filled sea.

Note: The routes and place names in this Bulletin may be located on the National Geographic Society's Map of North America (July, 1924) and the Map of the Arctic Regions (November, 1925).

Bulletin No. 5, March 24, 1930.

THE "GRAF ZEPPELIN" FLIES OVER WASHINGTON

Upon the completion of its transatlantic flight, with 20 passengers and a crew of 40, the great German craft flew over the national capital, October 15, 1928, on the way to Lakehurst, N. J. In the right foreground is the roof of the headquarters of the National Geographic Society; in the distance, the Washington Monument (See Bulletin No. 1).